

Claims

What is claimed is:

Sub A 1. In a residential environment capable of having televisions locatable in at least two separate locations, a method of decoding and distributing video signals from a residential gateway, the method comprising:

receiving at least one channel select command from at least one remote control device associated with a respective at least one television, wherein the at least one channel select command is received at a receiver within the residential gateway;

receiving a video signal from a telecommunications network in response to the received at least one channel select command;

constructing, from the video signal, at least one series of video packets corresponding to the at least one channel select command;

transporting the at least one series of video packets over a video packet bus to at least one video decoder;

decoding the at least one series of video packets to produce at least one television signal, the decoding performed by the at least one video decoder; and

transmitting the at least one television signal to the at least one television.

2. The method of claim 1, wherein the telecommunications network is a digital network and the video signal is a digital video signal.

3. The method of claim 1, wherein the at least one television signal is an analog television signal.

4. The method of claim 1, wherein the video packets are MPEG video packets, the video packet bus is an MPEG bus, and the video decoder is an MPEG video decoder.

5. The method of claim 1, wherein the receiver within the residential gateway is a wireless receiver which receives channel select commands transmitted from wireless remote control devices associated with remotely located televisions.

6. The method of claim 5, wherein the wireless receiver is a UHF receiver that receives the channel select commands as UHF signals from UHF remote control devices associated with the remotely located televisions.

7. The method of claim 1, wherein the receiver within the residential gateway is an optical receiver which receives channel select commands from an optical remote control device associated with a television located in close proximity to the residential gateway.

8. The method of claim 7, wherein the optical receiver is an infrared receiver that receives the channel select commands as infrared signals from a infrared remote control device associated with the television located in close proximity to the residential gateway.

9. The method of claim 1, wherein said receiving at least one channel select command includes receiving channel select commands from remotely located televisions via a wireless receiver within the residential gateway and channel select commands from a television in close proximity to the residential gateway via an optical receiver within the residential gateway.

10. The method of claim 1, wherein the at least one video decoder includes a main video decoder.

11. The method of claim 10, wherein the at least one video decoder further includes at least one insertable video decoder.

12. The method of claim 10, wherein the main video decoder decodes the video signal to produce a television signal having an S-video format.

13. The method of claim 10, wherein the television signal produced by the main video decoder is transmitted to a television that is located in close proximity to the residential gateway.

14. The method of claim 10, wherein the main video decoder is capable of decoding video signals associated with three separate channels.

15. The method of claim 1, wherein said decoding the at least one series of video packets includes

decoding video packets associated with a channel select command from a television located in close proximity to the residential into a television signal having a first format; and

decoding video packets associated with channel select commands from televisions remotely located from the residential

gateway into television signals having a second format different from the first format.

16. A residential gateway for distributing video signals to a plurality of televisions locatable within at least two separate locations in a residential environment, said residential gateway comprising:

Added
a receiver for directly receiving channel select commands from remote control devices associated with the televisions;

a network interface module for receiving signals, including video signals, from a telecommunications network, wherein the received video signals correspond to the channel select commands;

means for constructing at least one series of video packets from the received video signals;

a plurality of video processors for decoding the at least one series of video packets to produce at least one television signal; and

a video packet bus for transporting the at least one series of video packets to said plurality of video processors.

17. The residential gateway of claim 16, wherein the telecommunications network is a digital network and the video signal is a digital video signal.

18. The residential gateway of claim 16, wherein the at least one television signal is an analog television signal.

19. The residential gateway of claim 16, wherein said video packet bus is an MPEG bus and said plurality of video processors are MPEG video decoders.

20. The residential gateway of claim 16, wherein said receiver is a wireless receiver which receives channel select commands transmitted from wireless remote control devices associated with remotely located televisions.

21. The residential gateway of claim 20, wherein said wireless receiver is a UHF receiver that receives the channel select commands as UHF signals from UHF remote control devices associated with the remotely located televisions.

22. The residential gateway of claim 16, wherein said receiver is an optical receiver which receives channel select commands from an optical remote control device associated with a television located in close proximity to the residential gateway.

23. The residential gateway of claim 22, wherein said optical receiver is an infrared receiver that receives the channel select commands as infrared signals from a infrared remote control device associated with the television located in close proximity to the residential gateway.

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24. The residential gateway of claim 16, wherein said receiver includes

a wireless receiver for receiving channel select commands transmitted from wireless remote control devices associated with remotely located televisions; and

an optical receiver for receiving channel select commands from an optical remote control device associated with a television located in close proximity to the residential gateway.

25. The residential gateway of claim 16, wherein said plurality of video processors includes a main video decoder.

26. The residential gateway of claim 25, wherein said plurality of video processors further includes at least one insertable video decoder.

27. The residential gateway of claim 25, wherein said main video decoder decodes the video signal to produce a television signal having an S-video format.

28. The residential gateway of claim 25, wherein said main video decoder produces a television signal and transmits the television signal to a television located in close proximity to the residential gateway.

29. The residential gateway of claim 25, wherein said main video decoder is capable of decoding video signals associated with three separate channels.

30. The residential gateway of claim 16, wherein said plurality of video processors includes

a main video decoder for decoding video packets associated with a channel select command from a television located in close proximity to the residential into a television signal having a first format; and

at least one insertable video decoder for decoding video packets associated with channel select commands from televisions

remotely located from the residential gateway into television signals having a second format different from the first format.

31. A method for receiving and decoding signals from a telecommunications network at a residential gateway, and transmitting decoded signals from the residential gateway to a plurality of devices including multiple televisions, the method comprising:

connecting the residential gateway to the telecommunications network and to each of the plurality of devices so that all communications between the devices and the telecommunications network must pass through the residential gateway;

selecting a television channel to view for at least one of the multiple televisions by programming an associated remote control device to transmit a channel select command, wherein the channel select commands are received by a receiver within the residential gateway;

transmitting the at least one channel select command to the telecommunications network;

receiving a video signal from the telecommunications network corresponding to the at least one channel select command;

converting the video signal into at least one series of video packets;

decoding the at least one series of video packets into at least one television signal, the decoding performed by at least one of a plurality of video decoders; and

transmitting the at least one television signal to the appropriate television.

32. The method of claim 31, wherein said connecting the residential gateway includes connecting the residential gateway to a first television located in close proximity to the residential gateway with S-video cables.

33. The method of claim 31, wherein said selecting a television channel includes selecting a television channel for remotely located televisions by programming associated wireless remote control devices, the associated wireless remote control devices transmitting the channel select command as wireless signals to the residential gateway, the wireless signals being received by a wireless receiver within the residential gateway.

34. The method of claim 33, wherein the wireless remote control devices are UHF remote control devices, the wireless signals are UHF signals and the wireless receiver is a UHF receiver.

35. The method of claim 31, wherein said selecting a television channel includes selecting a television channel for remotely located televisions by programming associated remote control devices to transmit the channel select commands to the remotely located televisions, the remotely located televisions transmitting the channel select commands to the residential gateway.

36. The method of claim 35, wherein the associated remote control devices are infrared remote control devices.

37. The method of claim 31, wherein said connecting the residential gateway includes connecting remotely located televisions to associated receivers located in close proximity to the remotely located televisions and connecting the associated receivers to the residential gateway.

38. The method of claim 37, wherein said selecting a television channel includes selecting a television channel for the remotely located televisions by programming associated remote control devices, the associated remote control devices transmitting the channel select commands to the associated

receivers, the associated receivers transmitting the channel select commands to the residential gateway.

39. The method of claim 38, wherein the associated remote control devices are infrared remote control devices and the associated receivers are infrared receivers.

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40. The method of claim 31, wherein said selecting a television channel includes selecting a television channel for a television located in close proximity to the residential gateway by programming an optical remote control device, the optical remote control device transmitting the channel select command as an optical signal to the residential gateway, the optical signals being received by an optical receiver within the residential gateway.

41. The method of claim 40, wherein the optical receiver is an infrared receiver, the optical signals are infrared signals, and the optical remote control device is an infrared remote control device.

42. The method of claim 31, wherein the plurality of video decoders includes a main video decoder.

43. The method of claim 42, wherein the plurality of video decoders further includes at least one insertable video decoder.

44. The method of claim 42, wherein the main video decoder decodes the series of video packets to produce a television signal having an S-video format.

45. The method of claim 42, wherein the television signal produced by the main video decoder is transmitted to a television that is located in close proximity to the residential gateway.

46. The method of claim 42, wherein the main video decoder is capable of decoding video signals associated with three separate channels.

47. The method of claim 31, wherein said decoding the at least one series of video packets includes

decoding video packets associated with a channel select command from a television located in close proximity to the residential into a television signal having a first format; and

decoding video packets associated with channel select commands from televisions remotely located from the residential

gateway into television signals having a second format different from the first format.

48. A residential gateway for receiving and decoding signals from a telecommunications network and transmitting decoded signals to a plurality of devices including multiple televisions, the residential gateway comprising:

connectors for connecting the plurality of devices to the residential gateway;

a receiver for directly receiving channel select commands from remote control devices associated with the multiple televisions;

a network interface module for transmitting signals, including channel select commands, to the telecommunications network and receiving signals, including video signals, from the telecommunications network;

means for converting the video signals into series of video packets;

video decoders for decoding the series of video packets into television signals corresponding to the channel select commands, and transmitting the television signals to the corresponding televisions.

49. The residential gateway of claim 48, wherein said connectors include an S-video connector for connecting a television located in close proximity to the residential gateway to the residential gateway.

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50. The residential gateway of claim 48, wherein said receiver is a wireless receiver for receiving channel select commands from wireless remote control devices.

51. The residential gateway of claim 50, wherein said wireless receiver is a UHF receiver and the wireless remote control devices are UHF remote control devices.

52. The residential gateway of claim 50, wherein the wireless remote control devices are used by remotely located televisions to transmit the channel select commands to the residential gateway.

53. The residential gateway of claim 48, wherein said receiver is an optical receiver for receiving channel select commands from an optical remote control device.

54. The residential gateway of claim 53, wherein said optical receiver is a infrared receiver and the optical remote control device is an infrared remote control device.

55. The residential gateway of claim 53, wherein the optical remote control device is used by a television located in close proximity to the residential gateway to transmit the channel select commands to the residential gateway.

56. The residential gateway of claim 48, wherein said receiver includes

an optical receiver for receiving channel select commands from an optical remote control device; and

a wireless receiver for receiving channel select commands from wireless remote control devices.

57. The residential gateway of claim 48, wherein said video decoders include a main video decoder.

58. The residential gateway of claim 57, wherein said video decoders further include at least one insertable video decoder.

59. The residential gateway of claim 57, wherein said main video decoder decodes the video packets to produce a television signal having an S-video format.

60. The residential gateway of claim 57, wherein said main video decoder produces a television signal and transmits the television signal to a television located in close proximity to the residential gateway.

61. The residential gateway of claim 57, wherein said main video decoder is capable of decoding video signals associated with three separate channels.

62. The residential gateway of claim 48, wherein said plurality of video processors includes

a main video decoder for decoding video packets associated with a channel select command from a television located in close proximity to the residential into a television signal having a first format; and

at least one insertable video decoder for decoding video packets associated with channel select commands from televisions

remotely located from the residential gateway into television signals having a second format different from the first format.

63. The residential gateway of claim 48, further comprising a remote control module for processing channel select commands.

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64. The residential gateway of claim 48, further comprising a telephone module for receiving voice signals from the telecommunications network and converting the voice signals to a telephone signal compatible with a telephone connected to the residential gateway.

65. The residential gateway of claim 48, further comprising a data module for receiving data signals from the telecommunications network and converting the data signals to a computer signal compatible with a computer connected to the residential gateway.

66. The residential gateway of claim 48, further comprising a DAVIC module for receiving signals from the telecommunications network and transmitting the signals to a device connected to the residential gateway that can communicate directly with the telecommunications network.

67. In a residential environment having at least two televisions, a first television locatable in close proximity to a residential gateway and a second television remotely locatable from the residential gateway, a method of distributing video signals to the televisions from the residential gateway, the method comprising:

receiving channel select commands including a first channel select command directly from an optical remote control device associated with the first television at an optical receiver within the residential gateway, and a second channel select command from a second remote control device associated with the second television;

receiving, at a network interface module within the residential gateway, a video signal from a telecommunications network;

transporting, over a video signal bus, the received video signal to a video processor located within the residential gateway;

processing the transported video signal to produce a first television signal corresponding to the first channel select command and a second television signal corresponding to the second channel select command; and

transmitting the first television signal to the first television and the second television signal to the second television.

68. The method of claim 67, wherein said transmitting the first television signal includes transmitting the first television signal having an S-video format.

69. The method of claim 67, wherein said receiving channel select commands includes receiving the second channel select command directly from a wireless remote control device associated with the second television at a wireless receiver within the residential gateway.

70. The method of claim 67, wherein the video processor includes a main video processor and a secondary video module and said processing the transported video signal includes processing the video signal at the main video processor to produce the first television signal having a S-video format and processing the video signal at the secondary video module to produce the second television signal.

commands from an optical remote control device associated with the first television.

73. The residential gateway of claim 71, further comprising a wireless receiver for receiving channel select commands directly from a wireless remote control device associated with the second television.

74. The residential gateway of claim 71, wherein said video processor includes a main MPEG processor that constructs MPEG streams from the received video signals.

75. The residential gateway of claim 74, wherein said main MPEG processor is capable of simultaneously decoding several MPEG streams corresponding to several channels.

76. The residential gateway of claim 75, further comprising modulators for modulating the television signals onto available channels for transmission to the televisions.

77. The residential gateway of claim 74, wherein said video processor further includes an MPEG module, and said main MPEG processor decodes the MPEG streams associated with the first

television and said MPEG module decodes the MPEG stream associated with the second television.

78. The residential gateway of claim 77, wherein the first television signal has an S-video format.

79. A residential gateway for decoding and distributing signals from a telecommunications network to a plurality of devices including multiple televisions, the residential gateway comprising:

a network interface module for communicating with the telecommunications network, wherein the network interface module receives signals, including video signals, from the telecommunications network and transmits signals, including channel select commands, to the telecommunications network;

a main MPEG processor for decoding video signals associated with a first television into a first television signal, wherein the first television is located in close proximity to the residential gateway, and the first television signal has an S-video format and is available to the first television via an S-video port;

an optical receiver for directly receiving the channel select commands from an optical remote control device associated with the first television; and

a bus for transferring signals between said network interface module and said main MPEG processor.

80. The residential gateway of claim 79, further comprising a wireless receiver for directly receiving channel select commands from a wireless remote control device associated with a second television, wherein the second television is located remotely from the residential gateway.

81. The residential gateway of claim 79, wherein said main MPEG processor constructs MPEG streams from the received video signals.

82. The residential gateway of claim 81, wherein said main MPEG processor is capable of simultaneously decoding several MPEG streams corresponding to several channels.

83. The residential gateway of claim 82, further comprising modulators for modulating the television signals onto available channels for transmission to the televisions.

